

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA



Sixteenth meeting of the Conference of the Parties
Bangkok (Thailand), 3-14 March 2013

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Include the species *Adenia firingalavensis* in CITES Appendix II, in accordance with Article II, paragraph 2(a) of the Convention and Resolution Conf. 9.24 (Rev. CoP13), Annex 2 a, paragraph A.

B. Proponent

Madagascar*

C. Supporting statement

1. Taxonomy

- 1.1 Class: Dicotyledones
- 1.2 Order: Violales
- 1.3 Family: Passifloraceae
- 1.4 Genus, species, including author and year: *Adenia firingalavensis* (Drake ex Jum.) Harms
- 1.5 Scientific synonyms: *Ophiocaulon firingalavense* Drake ex Jum. (1903)
- 1.6 Common names: English: Bottle liana
Malagasy: holabe (Sakalava), holaboay, Kajabaka (North of Madagascar), lazamaitso (Tuléar), Lokoranga (Morondava), Olabory, Trangahy.
Vietnamese: Ga loi lam mao den
- 1.7 Code numbers:

2. Overview

Adenia firingalavensis is a climbing shrub that often has swollen roots and stem bases. Its leaves are deciduous and usually appear after the plant has flowered. This endemic species to Madagascar is collected from the wild and has become rare. However, it is not yet protected by the CITES Convention.

The present document suggests that the species *Adenia firingalavensis* meets the criteria for inclusion in CITES Appendix II in accordance with Article II, paragraph 2(a) of the Convention and Resolution

* The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

Conf. 9.24 (Rev. CoP13), Annex 2 a, paragraph A. Regulation of trade in the species is required to ensure that the harvest of specimens from the wild is not reducing the wild population and that the survival of the species is not threatened by continued harvesting or other influences.

3. Species characteristics

3.1 Distribution

Adenia firingalavensis has a wide geographic distribution and is found in all the deciduous forests of the west, southwest and south of Madagascar, including Ankarana Special Reserve, Bemaraha National Park, Ankarafantsika National Park, Kirindy and Andranomena Special Reserves, Mikea and Andoharano forests north of Toliara, and Ekodida and Tranomaro forests south of Toliara.

The geographic distribution of *Adenia firingalavensis* is shown in Annex 1.

3.2 Habitat

Adenia firingalavensis grows on sandy soil, stony calcareous soil or rocky outcrops in deciduous forests and thickets at an altitude between 50 and 600 m.

3.3 Biological characteristics

Adenia firingalavensis flowers from December to April. The fruiting period is between December and February.

3.4 Morphological characteristics

Adenia firingalavensis is a large succulent liana with a swollen stem and a conical to subspherical trunk up to 2 m tall and 50 cm in diameter. The outer bark is blue-green, warty and mostly covered with a thick greenish layer of resin. The leaves are leathery, deciduous and simple, with two glands at the apex of the petiole and triangular to filiform stipules; the blade is orbicular to ovate, sometimes entire but mostly three-lobed, with simple tendrils 4-10 cm long in the axils of the leaves. The inflorescence is short, axillary, subsessile and green; the perianth is greenish or whitish, with white lobes. The flowers are green or white. The fruit is an ovoid to ellipsoid capsule 6-7 cm x 3-4 cm with a leathery pericarp, opening with three valves, containing 30-60 seeds.

3.5 Role of the species in its ecosystem

The leaves of *Adenia* plants are eaten by the larvae of butterflies of the genus *Acraea* (www.biodiversityexplorer.org).

The fruits of *Adenia firingalavensis* are eaten by the small lemur *Microcebus ravelobensis* (Radespiel, 2006).

4. Status and trends

4.1 Habitat trends

Adenia firingalavensis is found in two main types of habitat: thickets and dry forests.

The dry thorny thicket of the south and southwest covers an area of approximately 18,355 km² (of which 4.5 % is within protected areas). This type of forest has decreased by 29.7 % since the 1970s (Moat & Smith, 2007).

The dry forest of the west covers an area of 31,970 km² (of which 17.1 % is within protected areas). This type of forest has decreased by 39.7 % since the 1970s, which represents a considerable loss (Moat & Smith, 2007).

These formations are fragile. Degradation results in more or less open forests and even savannahs with a continuous grass cover.

4.2 Population size

Adenia firingalavensis has a fairly low density (between 60 and 70 individuals per hectare), which is the reason for the low abundance of the species: 120 to 140 mature individuals, that is, fewer than 250 individuals (Table 1).

Table 1: Density and numerical abundance of *Adenia firingalavensis*

Parameters	Sites	
	Beroboka	Andranomena
Total area of study plots (ha)	0.4	0.3
Number of mature individuals in 0.1 ha	6	7
Average specific density (ind./ha)	60	70
Estimated area occupied by the species (ha)	2	2
Estimated total abundance	120	140

4.3 Population structure

The absence of juvenile to adult individuals has been observed in the collection areas visited. Growth of this plant is relatively slow. *Adenia firingalavensis* has a low regeneration potential: 18.2 % in Beroboka and 150 % in Andranomena.

4.4 Population trends

In the collection areas, individuals of a commercially exploitable size have become increasingly rare. In addition to massive collection for export, habitat destruction by various anthropogenic activities results in a gradual decline in the number of existing populations (a future decline of 70 % is expected).

4.5 Geographic trends

Adenia firingalavensis is a widespread species, with an estimated extent of occurrence of 91,994 km² and an area of occupancy of 99 km². The area actually occupied by the species continues to decrease each year due to fires and the clearing of new land for agriculture.

5. Threats

Forests are rapidly disappearing and are becoming fragmented due to charcoal production, agricultural expansion for maize production and bushfires to create new pastures for livestock.

In addition, excessive collection of *Adenia firingalavensis* from the wild poses a real threat to the species and is detrimental to its survival.

6. Utilization and trade

6.1 National utilization

The species is a sought after ornamental plant on the international market because of its climbing form and its swollen trunk.

Adenia firingalavensis is used in traditional medicine in Madagascar. The bark is used to treat scabies.

6.2 Legal trade

The highest number of seedlings was sold in 2004 - 358 seedlings exported (Table 2).

Table 2: Evolution in the number of seedlings of *Adenia firingalavensis* exported per year

Years	2003	2004	2005	2006	2007	2008
Number of seedlings exported	18	358	168	10	0	0

Source: Management Authority (DGEF) and Permanent Secretariat, CITES Madagascar, 2009

6.3 Parts and derivatives in trade

Adenia firingalavensis is exported in the form of live plants.

6.4 Illegal trade

No illegal trade in *Adenia firingalavensis* has been recorded to date. The species is rarely traded in the local market.

6.5 Actual or potential trade impacts

This species is collected from the wild to supply the international market. Individuals of a commercially exploitable size are becoming increasingly rare in the field. Harvesting for export could thus lead to the absence of natural regeneration and the decline or even disappearance of populations in certain collection areas. In the long term this would pose a serious threat to the survival of the species.

As the geographic distribution of the species is fragmented, collectors change harvesting sites once they have become depleted.

7. Legal instruments

7.1 National

Since the species is not yet included in the CITES Appendices, its exploitation is not subject to CITES regulations. Collection and export are only regulated by authorization procedures at national level.

7.2 International

Inclusion of the species in CITES Appendix II will ensure that all exports are accompanied by a CITES permit that attests to the fact that the specimens were collected in compliance with existing laws and using methods that are not detrimental to the survival of the species.

In addition, specimens of species in Appendix II will benefit from Reviews of Significant Trade that will make it possible to monitor and update their biological and ecological data.

8. Species management

8.1 Management measures

The number of specimens authorized for export is based on the stock of the species in a horticultural centre. A single collection permit per species per operator is granted for the establishment of parental stock (mother plants). After this, operators must propagate the plants *ex situ*. Export permits and authorizations are only issued for artificially propagated specimens.

8.2 Population monitoring

Adenia firingalavensis was the subject of a Review of Significant Trade in relation with its possible inclusion in CITES Appendix II in 2010. According to the IUCN criteria, its conservation status is Vulnerable VU B2b (i,ii,iii), with the addition of sub-criterion C2(b), that is, a continuing decline and extreme fluctuations in the number of mature individuals.

8.3 Control measures

8.3.1 International

The species is not yet included in the CITES Appendices.

Inclusion of the species in Appendix II will ensure that all exports are accompanied by a CITES permit that attests to the fact that the specimens were collected in compliance with existing laws and using methods that are not detrimental to the survival of the species.

8.3.2 Domestic

Certain populations of the species occur in protected areas (Ankarana, Bemaraha, Kirindy, Andranomena, Kirindy Mitea and Tsimanapetsotsa).

8.4 Captive breeding and artificial propagation

Propagation of this species from seed is easy but slow.

Propagation from cuttings is possible.

8.5 Habitat conservation

The fact that the habitats of *Adenia firingalavensis* are found in protected areas already constitutes long-term conservation of the species. The new recently delimited protected areas such as Corridor Bongolava, Amoron'ny Onilahy and Ekodida may broaden the conservation areas for this species.

8.6 Safeguards

To ensure the continued existence of the species, the issuance of export permits and authorizations should strictly be limited to artificially propagated specimens.

Under an agreement between the CITES Secretariat and the Malagasy Scientific Authority for Plants, *Adenia firingalavensis* will be the subject of further research in 2012 to supplement the existing data.

9. Information on similar species

None.

10. Consultations

The other countries have not been consulted because this species is endemic to Madagascar.

11. Additional remarks

This species was already the subject of a proposal for inclusion in Appendix II at CoP15 in Doha (Qatar) in 2010. The biological and ecological data obtained were updated and supplemented to prepare this new proposal for the inclusion of the species in Appendix II.

12. References

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13. Webography

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<http://www.out-of-africa-plants.com/Specimens.htm>

<http://www.1604photo.com/top/main2.htm>

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14. List of annexes

Annex 1: Illustrations and geographic distribution of *Adenia firingalavensis*

Annex 2: Preliminary data on the Web trade of Malagasy succulent plants species coordinated at RBG Kew (A Web survey investigating the current Web-based trade in Malagasy succulent species has been carried out. The species include both CITES-listed and non CITES-listed species).

Annex 1: Illustrations and geographic distribution of *Adenia firingalavensis*



Adult specimen of *Adenia firingalavensis*
(Rakotondrabe, 2012)



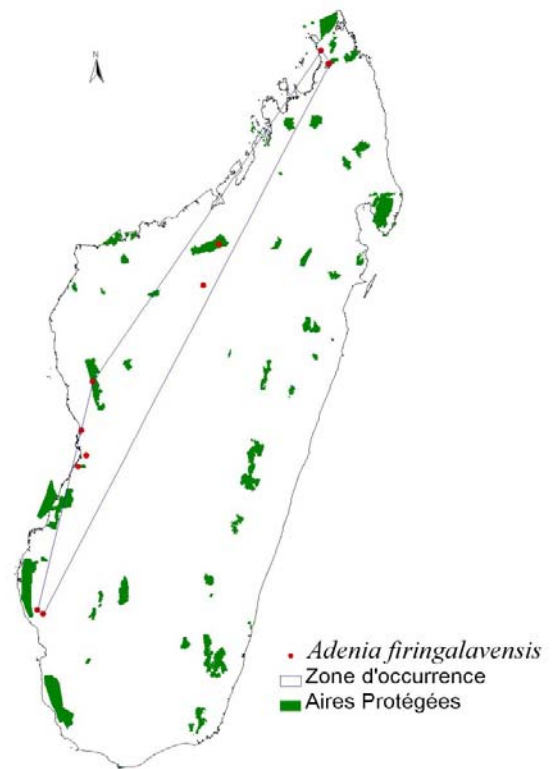
Flowering branch of *Adenia firingalavensis*
(Rakotondrabe, 2012)



Fruiting branch of *Adenia firingalavensis*
(Rakotondrabe, 2012)



Leafy branch of *Adenia firingalavensis*
(Rakotondrabe, 2012)



Preliminary data on the Web trade of Malagasy succulent plants species coordinated at RBG Kew
 A Web survey investigating the current Web-based trade in Malagasy succulent species has been carried out.
 The species include both CITES listed and non CITES-listed species.

Species	Website location					Specimen type for sale				Source of specimens for sale			Price range in USD			
	USA	EU	Other	Unknown	Total	Mature	Seedling	Seeds	Unknown	Wild	Propagated	Unknown	Per plant		Per seed	
													Min	Max	Min	Max
<i>Operculicarya decaryi</i>	11	4	2	1	18	9	1	5	3		1	17	14.95	400.00	0.39	0.86
<i>Senna meridionalis</i>	3		1		4	3		1		1		3	20.35	150.00	0.51	
<i>Adenia firingalavensis</i>	1	1	1		3	2		1		1		2	75.00	236.72	1.41	
<i>Adenia subsessifolia</i>	1	1			2	2						2	8.00	15.65		
<i>Cyphostemma laza</i>	3	2	1		6	3	1	1	1			6	28.00	65.00	1.18	
<i>Uncarina stellulifera</i>	3	1			4	1		3			1	3	70		0.66	2.52
<i>Uncarina grandidieri</i>	10				10	7	3						30	500		